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ABSTRACT

The skills and competencies considered key to participation in Australia's society and work force and the process used to identify them were examined against the backdrop of the development of New Zealand's essential skills and generic competency developments in England and Wales, Scotland, the United States, Canada, and Germany. It was concluded that most countries' lists of generic/essential skills and competencies are similar and cover the following areas: communication; collecting, analyzing, and organizing information; planning/organization; interpersonal and social skills; numeracy; problem solving; and technological skills. The Australian key competency "cultural understandings" proved unique inasmuch as no other country has specifically developed cultural understanding as a generic skill in its own right. However, Australia's list of key competencies had no equivalent of the United Kingdom's "modern foreign language" core or New Zealand's "physical skills" essential skill. As in the United Kingdom, the development of attitudes and values as a key competency was advocated strongly by industry but rejected by the committee responsible for developing standards. Differences were found in the way individual countries define generic competencies, the number of performance levels at which competencies are defined, and the degree to which individual skills are considered generic. (Contains 37 references.) (MN)

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Australian key competencies in an international perspective

MARK C WERNER

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MARK C WERNER

NCVER

Adelaide 1995

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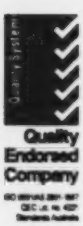

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Introduction

Amongst the latest developments to make a significant impact on the educational scene worldwide are 'generic competencies.' The acquisition of these competencies by the general population, and particularly the emerging workforce, is seen as essential for the development and maintenance of the workforce, to enable sustained and improved economic performance in an increasingly competitive global environment.

In Australia, generic competencies are being developed as the Mayer 'employment-related key competencies', whilst in New Zealand they are referred to as 'essential skills.' A number of other countries including England, Germany and the United States are also developing generic competencies. This report investigates what prompted their adoption and the information and processes used to arrive at what are considered to be the *key competencies* and *essential skills*. Further, a review of the development of generic competencies in a number of other overseas countries is investigated and compared with the Australian and New Zealand developments.

Differences in the definition of generic competencies occur between countries, resulting in different lists of what are considered to be generic competencies. One of the main characteristics of generic competencies which is treated differently between countries is transferability, that is, whether or not a generic competency taught and learned in one context or environment automatically transfers to another context or environment. Introducing generic competencies in curricula also poses new problems in relation to assessment procedures and relationships to existing educational standards frameworks.

1 Australian and New Zealand definitions

1.1 Generic competencies: What are they?

A number of names have been used in reference to generic competencies including 'key competencies' in Australia, 'essential skills' in New Zealand, 'foundation skills' or 'workplace competencies' in the United States, and 'core skills' in England and Scotland. The terms 'transferable skills', 'transition skills', 'enabling skills', 'basic skills' and 'core competencies' have also been used in reference to generic skills.

What definitions there are of 'competence' usually differ and are not specific, even more so with respect to 'generic competencies'. In general, 'competence' may be defined as the ability to perform specified tasks and possessing the relevant knowledge and understanding. 'Competencies', then, are abilities, along with the relevant knowledge and understanding, to perform a number of specified tasks. It follows that 'generic competencies' are those competencies that are generic or general, in the sense that they underpin the acquisition of specific competencies. Some go further and require that competencies also be transferable between situations or contexts in order to be considered generic.

Each country and committee developing the idea of generic competencies has its own definition of competence and generic competencies. Although there is nothing essentially wrong with this, as definitions may be constructed specifically for local conditions, such variations make the possibility of meaningful international comparison difficult.

1.2 Definitions of, and associated with, generic competencies in Australia and New Zealand

1.2.1 AUSTRALIA

Finn committee

One of the first committees in Australia to develop the idea of generic competencies was the Finn committee (Finn 1991). The committee stated that 'Competence has been an unstable concept which requires explicit definition' (p.56). However, the committee did not put forward an explicit definition of competence that it would use but

merely stated that it '. . . adopted a broad definition of 'competence' in line with that of the NTB' (p.57).

In turn, the National Training Board (NTB 1992) defined a competency as comprising:

> *. . . the specification of knowledge and skill and the application of that knowledge and skill within an occupation or industry level, to the standard of performance required in employment.*
>
> *The concept of competency focusses on what is expected of an employee in the workplace rather than on the learning process; and embodies the ability to transfer and apply skills and knowledge to new situations and environments. (p.29)*

The NTB considered this concept of competency a broad one in that all aspects of work performance are included, not only narrow task skills. For example, the requirement to manage a number of different specific tasks and to be able to respond to irregularities and breakdowns in routine were seen as ingredients of competency.

In his search for the Finn committee's definition of competence, Speedy (1992) stated that:

> *The broad definition referred to [in the Finn report] is never made explicit but it is presumed to include:*
> - *the ability to perform specified tasks;*
> - *relevant knowledge and understanding;*
> - *the ability to transfer skills and knowledge to new situations.*

Competence as defined by the NTB was for use within an employment/performance context. This being the case, Speedy (1992) raised the questions that if the Finn report definition follows the NTB model, then:

> - *How is 'the ability to perform specified tasks' to be related to pre-employment (employability) rather than specific employment which is the original referrent?*
> - *How are knowledge and understanding to be defined and assessed in relation to the 'specified tasks'? (p.40)*

Although the Finn committee adopted the term 'key competencies', the definition was left as a responsibility for the Mayer committee.

Mayer committee

The Mayer committee was set up expressly to develop the idea of employment-related key competencies recommended in the Finn report. Following in the shadow of the Finn committee, the Mayer committee also adopted a broad definition of competence that was 'consistent with the definition adopted by the NTB' without giving an

explicit definition of their own. Nevertheless, the Mayer committee (Mayer 1992a, p.7) did state that:

> *The committee adopted a broad definition of competence which recognises that performance is underpinned not only by skill but also by knowledge and understanding, and that competence involves both the ability to perform in a given context and the capacity to transfer knowledge and skills to new tasks and situations.*

This concept of competency, although fundamentally the same as that adopted by the NTB, differs in two significant ways. Firstly, it does not require the transfer of knowledge and skills to new environments and secondly, it is not restricted to the employment context . Thus seven years after the Karmel committee (Karmel 1985, p.70) gave a simple definition of competence as '...the ability to use knowledge and skills effectively to achieve a purpose,' the only change to the definition, albeit a significant one, has been the addition that knowledge and skills must be transferable to new tasks and situations.

Having now established an understanding of what the Mayer committee adopted as the meaning of competence, their explicit 'definition' of key competencies follows:

> *Key competencies are competencies essential for effective participation in the emerging patterns of work and work organisation. They focus on the capacity to apply knowledge and skills in an integrated way in work situations. Key competencies are generic in that they apply to work generally rather than being specific to work in particular occupations or industries. This characteristic means that the key competencies are not only essential for effective participation in work but are also essential for effective participation in further education and in adult life more generally.* (Mayer 1992a, p.7)

Having given the above explicit definition of key competencies, the Mayer committee later in its report stated that it:

> *. . . maintains the view that a set of key competencies can only contain those things which can be developed by education and training, which do not require some innate predisposition or adherence to a particular set of values and which are amenable to credible assessment. (Mayer 1992a, p.13)*

These restrictions greatly reduce what can be considered a key competency as originally defined by the committee and thus should have been included in the original definition. It will be assumed that the above restrictions are included in the definition of key competencies.

Thus, from the Mayer committee's explicit requirements for key competencies and the implicit requirements imposed due to their

'definition' of competence, key competencies must:

- be essential for effective participation in employment, further education, and adult life more generally;
- focus on the capacity to apply knowledge and skills in an integrated way in work situations;
- apply to work generally rather than being specific to work in particular occupations;
- only contain those things which can be developed by education and training;
- not require some innate predisposition or adherence to a particular set of values;
- be amenable to credible assessment;
- be transferable to new tasks and situations.

As the interpretation of at least one of these requirements is non-specific and open, it follows that 'key competencies' have still not been rigidly defined. For example, how is 'effective participation' to be defined, when is a competence 'essential', and how is one to determine if a competence is 'amenable to credible assessment'? Depending on how these requirements are defined, the list of key competencies could vary dramatically.

Transferability

One of the more complex requirements for a key competency is that it be transferable to new tasks, situations or environments. What is not made clear by either the NTB or the Mayer committee, is whether or not competency is to be considered context or domain bound. (A 'domain' may be broadly defined as a specific body of knowledge.) For example, consider a student who understands the principles and workings of the human heart as a pump. For the student to be considered competent in this understanding, must he or she be able to transfer this understanding to enable understanding of the principles and workings of a mechanical pump (this being another context or domain), or need the student only have to transfer this understanding in order to understand the principles and workings of other mammals' hearts as a pump (this being within the same context or domain)?

Should the former be the case, the set of key competencies may be very much smaller than first thought, due to recent evidence from a number of cognitive analysts that:

> . . . *suggests that ways of thinking applicable for one domain of knowledge may be inapplicable in another.* (Stanley 1993, p.151)

Only vague references by the NTB and Mayer committee shed light on whether or not competency is to be considered context bound, some of these being contradictory. The sentence: 'This is essential for the transferability of the skill *across the stated range,*' in the NTB's National Competency Standards (NTB 1992, p.35) implies that transferability may only need be *within* a particular context or

domain. On the other hand, the NTB's definition of competency required that skills and knowledge be transferable not only to new *situations* (as for the Mayer committee definition) but also to new *environments*, suggesting competency should be transferable across contexts and domains.

Although the Mayer committee adopted its definition of competence from the NTB's definition, it did not include the NTB's requirement that competence be transferable to new *environments*, suggesting that the Mayer committee's definition of competence did not require transferability across contexts. However, the sentence 'Because the competent performer has grasped the principles behind actions the possibility of transferability to new contexts is heightened.' (Mayer 1992a, p.7) suggests that transferability *across* contexts or domains was a requirement, or at least a desired outcome, of their definition.

Further, in '. . . seeking to reflect the notion of transferability' the Mayer committee required that:

> *Achievement of a given performance level should be based on assessment at that level in at least two different contexts.* (Mayer 1992a, p.46)

and stated that 'different contexts might be defined as different subjects or physical settings'. However, the committee preferred not to give a firm definition of difference in context 'at this stage' (Mayer 1992a, p.46).

Although the indications are that the Mayer committee desired the key competencies to be transferable across contexts, it was aware of research findings that suggest:

> *. . . learning is bound by context and that, when presented with a fundamentally similar but unfamiliar situation, learners are often unable to recognise the similarities in order to call up the necessary knowledge and skills to succeed.* (Mayer 1992c, p.10)

Transferability was, nevertheless, still considered 'perhaps the most essential attribute of competence' (Mayer 1992c, p.10).

Until clear definitions of 'situations', 'environments' and 'different contexts' are established, it will remain unclear as to whether or not competence is to be considered context bound. Nevertheless, the above findings indicate that the Mayer committee, at least, thought of competence as requiring transferability of skills and knowledge across contexts and domains.

Much caution needs to be exercised by those developing or implementing policies that assume the key competencies will automatically transfer to new contexts and situations as research increasingly shows otherwise. If transferability across contexts is to

be kept a required feature of key competencies, then what was originally the list of key competencies may have to be shortened considerably.

1.2.2 NEW ZEALAND

Definition of essential skills

The term 'essential skills' as used in New Zealand, can be considered the parallel to the Australian term 'key competencies'. In the New Zealand Qualifications Authority's (NZQA) consultation document *Essential Skills and Generic Skills in the National Qualifications Framework* (NZQA 1993b), 'essential skills' were defined as:

> . . . *those identified by the Ministry of Education in the* New Zealand Curriculum Framework *as fundamental for learners in achieving their full potential and participation in society. They may be developed in different ways and learning environments, but are transferable to new situations.* (p.4)

Unlike most other definitions, this one differs in that it consists of a list of essential skills rather than a number of conditions to be satisfied. However, vagueness of definition occurs with respect to the interpretation of 'may be developed in different ways', 'learning environments', and 'transferable to new situations'.

The requirement that essential skills may be developed in different ways and learning environments appears to refer to the following statement and example:

> ***Essential** and **generic skills** can be acquired in different contexts. Communications skills can be developed in a sports team, in a formal debate, in a class or group exercise, as part of a school field trip, on the marae, or through participating in a discussion group on improving product quality.* (NZQA 1993b, p.7)

The term 'essential skills' was used as it described:

> . . . *the two key elements of essential, in that all individuals should be developing the skills, and skill, as distinct from knowledge or understanding.* (NZQA 1993b, p.6)

Transferability

'A key issue in implementing essential skills . . . is the degree to which skills transfer from one situation to another' (NZQA 1993b, pp.13-14). Although essential skills were defined to be transferable to new situations, later in the same document, this requirement was relaxed to: 'essential and generic skills are more likely to be transferable' (NZQA 1993b, p.7). This also contrasts with the statement that 'essential skills are transferable' in an earlier discussion document (NZQA 1993a, p.5).

This more cautious approach has come about due to the realisation that:

> *Some research suggests that any skill transfer is limited, and unlikely to occur without teaching the application of the skill in multiple contexts and situations over an extended period of time.* (NZQA 1993b, p.14)

It was further stated that:

> *Without a great deal more research, it will be difficult to know the best delivery approach to take in maximising skill transfer. . . . It is worthwhile encouraging the development of* essential skills *and* generic skills *in more than one context in order to heighten the likelihood of transfer to new situations.* (NZQA 1993b, p.14)

These later statements imply that transferability was not intended to be a rigorous definitional requirement of essential skills, rather, that the transferability of essential skills be maximised by teaching methodologies. This view is supported by the fact that 'essential skills' were defined in the glossary of the NZQA's consultation document merely as '. . . those identified by the Ministry of Education...' (NZQA 1993b, p.30).

Whether or not an essential skill is to be context-bound or context-free will depend on the individual skill:

> *Some of the essential skills . . . can be developed in stand-alone contexts. For example driving skills can be developed in a separate programme, and these skills will readily transfer to different vehicles and different environments. Communication skills . . . can be developed as a separate programme to be employed in a range of contexts.*

With other skills, for example, problem solving, . . . it is unlikely that teaching and learning could be undertaken without familiar contexts that present considerable cognitive challenges. . . . The development of problem-solving skills would have to be closely integrated with other unit standards in a particular learning domain. (NZQA 1993b, p.13)

1.3 Comparisons between the Australian and New Zealand definitions

In comparing the definitions of Australian key competencies and New Zealand essential skills, some differences and similarities become apparent.

The ways in which the basic definitions of the Australian key competencies and the New Zealand essential skills are structured differ. The key competencies are defined as competencies satisfying a number of conditions, some of which are open to wide interpretation. On the other hand, the definition of the New Zealand essential skills is a closed one in that they are defined as a specific list of skills.

Knowledge is treated differently in the definitions. For the New Zealand essential skills, the emphasis is on skills 'as distinct from knowledge or understanding', whereas the Australian key competencies must 'involve integration and application of knowledge and skills' (Mayer 1992b, p.8). The New Zealand position highlights the emphasis on developing usable skills rather than knowledge alone. Nevertheless, the importance of possessing relevant knowledge for the successful development of essential skills is still recognised.

Another difference is the treatment of transferability. The key competencies are defined to be transferable (although it is unclear whether this transferability must be across contexts or domains), whereas transferability appears to be not a definitional requirement for essential skills, rather, a desirable outcome of the teaching of these skills.

'Generic' with respect to key competencies refers to skills applying to work generally rather than specific work. In the New Zealand context, essential skills were considered as a subset of 'generic skills', generic skills being defined as '. . . skills that traverse a range of situations or occupations' (NZQA 1993b, p.6). Thus the Australian key competencies and the New Zealand essential skills may be considered equivalently 'generic'.

As a final illustration of problems with definitions, the Australian/New Zealand Vocational Education and Training Glossary in *Bridging the Tasman* (Kearns et al. 1993) included the following entries:

- **General or generic competence**—In Australia these are referred to as **key competencies**. In New Zealand the term is **essential skills**.
- **Key competencies**—In Australia are **generic competencies**, such as problem-solving, which are essential for effective participation in work and other social settings.
- **General competencies**—refers to those that apply to work generally rather than being specific to work in particular occupations or industries. They tend to underpin performance in other more industry specific competencies. Also may be called **generic competencies** (See **common competencies**).
- **Common competencies**—refer to those broad-based integrated skills and knowledge that are used in a number of industries with essentially the same outcomes, and sometimes the same form of expression. (Kearns et al. 1993, pp.A.5-A.10)

There is no separate listing for essential skills which are different from key competencies.

These findings indicate that there is still confusion as to what is being talked about when discussing essential skills, key competencies and competence. Until definitions are made specific and widely understood, no meaningful progress will be achieved between organisations developing the concept of generic competencies.

2 Development of key competencies in Australia

It is often thought that the idea of employment-related key competencies in Australia was first conceived by the Finn committee (Finn 1991) and passed on to the Mayer committee (Mayer 1992) for development. Neither of these committees, nor most of the literature concerned with the development of key competencies in Australia, acknowledges the work of the Quality of Education Review Committee, otherwise known as the Karmel committee (Karmel 1985), which produced a set of 'general competencies' and also used the term 'key competence'.

2.1 Karmel committee

The Karmel committee was established in 1984 to develop strategies for raising the standards attained by students in communication, literacy and numeracy in primary and secondary education and for improving the relationship between secondary schooling and subsequent employment and education. In developing these strategies, the committee relied largely on consultations with education and labour market authorities, on previously published reports, papers and data and on material presented to it.

As a result of the committee's work, one of its recommendations was that funding be provided to government and non-government schools for:

- improving among students in primary, and particularly junior primary, schools, the development of the general competencies of :
  - acquiring information
  - conveying information
  - applying logical processes
  - performing practical tasks as individuals
  - performing practical tasks as members of a group. (p.201)

In the descriptions of these five general competencies, many thoughts remarkably similar to those expressed in the Mayer committee's discussion of key competencies are expressed. In describing the 'acquiring information' competency, it was stated that:

> *5.10 These skills, and others like them, are not the preserve of any particular subject discipline; their acquisition should be possible through many different subject areas, both academic and practical.*

> *. . . They are required at higher levels for successful study at universities and colleges of advanced education, but they are equally necessary for functioning in employment and in society generally.* (p.70)

2.2 Finn committee

2.2.1 Background

The Finn committee next developed the idea of 'employment-related key competencies' in its report *Young people's participation in post-compulsory education and training* (Finn 1991). The formation of this committee in 1991 by the Australian Education Council (AEC) was prompted by vastly increased retention rates to Year 12, corresponding increases in direct school leaver entry to higher education, record apprenticeship intakes, and record levels of participation in TAFE vocational courses. These high increases in participation:

> *. . . raised important issues about the appropriate form and focus of education and training provision at the post-compulsory level, and the organisational and delivery arrangements which will best meet the needs of the 15-19 age group.* (p.1)

Further need for a review of the development of post-compulsory education and training came about due to the:

> *. . . clear trend towards 'convergence' of the full-time curricula offered to young people by senior secondary schools and TAFE, reflected in the increasingly vocational emphasis of many new programs at upper secondary level and the incorporation in most full-time TAFE courses of a significant element of general education.* (p.1)

The main aim of the committee was to report on the future development of post-compulsory education and training in Australia with particular reference to those young people who have left school and are not participating in a formal education or training program. One of the committee's specific tasks was to identify a set of appropriate national curriculum principles to enable all young people to develop key competencies.

In developing the idea of key competencies, the committee was influenced by overseas educational and training structures. Australia has traditionally delivered 'vocational' and 'general' education separately, with schools providing the general education whilst vocational education and training has been provided by 'technical' schools, TAFE, private colleges and employers. Quite a different approach is taken overseas as pointed out to the committee in a submission from the Dusseldorp Skills Forum which highlighted the fact that in many countries, schools not only provide a general education (as in Australia) but also provide students with skills

required for the labour market, higher education and 'active citizenship'. The Dusseldorp Skills Forum also pointed out that:

> *It is widely accepted elsewhere in the world that the continued development of intellectual and social competencies in the post-compulsory years needs to be enmeshed with the development of competencies that are explicitly required by the labour market.* (from Finn 1991, p.5)

Further, recent developments in Europe and the OECD point:

> *. . . to a need for the competencies required by workers in their roles as citizens to merge more closely with the competencies that they require in the workplace . . . the argument is for a convergence of vocational and general education to meet both individual needs and industry needs.* (Finn 1991, p.6)

The Finn committee was of the opinion that individual and industry needs in Australia were also leading to a convergence of general and vocational education and thus subsequently adopted an approach similar to that overseas.

2.2.2 Development of the key areas of competence

In identifying the key areas of competence, the Finn committee explicitly limited its task to the '. . . areas related to a young person's initial and lifelong employability' (p.54). Despite this approach, the committee was of the opinion that:

> *. . . once it had identified what it regarded as essential competencies for the world of work, it had also incorporated many of the attributes required for individual well-being and for citizenship.* (Finn 1991, p.55)

Due to time constraints, the committee further limited its task to '. . . the development of a concept and a supportive model', with finalisation of the model to be the responsibility of a follow-up group.

The committee's process for arriving at their final list of key areas of competence was as follows:

> *The committee initially drew on its own expertise to compile a list of key employment-related competencies which it considered were essential for all young people in post-compulsory education or training regardless of the ability or vocational/educational destination of the young person or whether they were in school or in a training environment.*
>
> *This initial list was then tested against similar lists in the literature, submissions to the committee and in consultation with experts in the school, training and adult literacy areas. (p.57)*

Although the committee gave a listing of the eighty-two submissions given to it, no explicit reference was made as to which submissions or consultations most influenced the committee's development of the key areas of competency. Thus it is not clear what emphasis was placed on input from employers, teachers, government departments or educational researchers. A need to consult more widely than time had allowed the committee was admitted.

2.2.3 The key areas of competence

As a result of its work, the committee recommended that:

> The AEC and MOVEET endorse the following key areas of competence as essential for all young people engaged in post-compulsory education and training.
>
> - Language and communication
>   - speaking
>   - listening
>   - reading
>   - writing
>   - accessing and using information
> - Mathematics
>   - computation
>   - measurement
>   - understanding mathematical symbols
> - Scientific and technological understandings
>   - understanding scientific and technological concepts
>   - understanding the impact of science and technology on society
>   - scientific and technological skills including computing skills
> - Cultural understanding
>   - understanding and knowledge of Australia's historical, geographical and political context
>   - understanding of major global issues—e.g. competing environmental, technological and social priorities
>   - understanding of the world of work, its importance and requirements.
> - Problem solving
>   - analysis
>   - critical thinking
>   - decision making
>   - creative thinking
>   - skill transfer to new contexts
> - Personal and interpersonal
>   - personal management and planning including career planning
>   - negotiating and team skills
>   - initiative and leadership
>   - adaptability to change
>   - self-esteem
>   - ethics. (Finn 1991, pp.57–58)

2.2.4 Comparisons with other lists and omissions

Although in arriving at this list the committee tested its list against those in the literature, it 'was interested to note' that the competencies identified were mirrored in at least two overseas projects. The two overseas projects acknowledged by Finn were the American Secretary's Commission on Achieving Necessary Skills (SCANS) interim report *America 2000: What work requires of schools*, and the National Council for Vocational Qualifications (NCVQ) work in the United Kingdom on 'core skills'. The development of generic skills by both of these organisations will be covered later in this paper.

Although the committee considered including knowledge of a language other than English (LOTE) as a key competency, it decided not to on the grounds that a LOTE is (not yet) an essential employment-related skill for all young Australians. In other words, it is possible to function in the Australian workplace without knowledge of a LOTE. The exclusion of this item was not mirrored in the United Kingdom's NCVQ's list of 'core skills' which included a modern foreign language (NCVQ 1991a).

2.2.5 Standards framework

Having identified the key areas of competence, the Finn committee's next task was to suggest a consistent standards framework for the competencies describing different levels of achievement against which progress could be assessed and reported. This framework also had to apply to both the school and training sectors.

Each area of competence is made up of a number of component strands, for example, the key area of competence 'language and communication' consists of the strands speaking, listening, reading, and so on. The committee proposed that each strand be constructed into a 'profile', that is, comprising four levels of achievement (figure 1). The committee rejected the approach of defining only a minimum standard in the key competencies for all young people to attain by the end of their compulsory schooling on the grounds that this would not provide appropriate benchmarks for students achieving above the minimum standard, neither would it provide any stimulus for students to strive for higher achievement. The committee was also concerned that if only a minimum standard were set, then teachers and students would slip into a complacent approach and only fulfil the minimum requirements, thus, possibly, depressing standards overall.

The committee considered directly linking the key competency profiles with the levels in the NTB's Australian Standards Framework (ASF) which was released in January 1991. This possibility was rejected on the grounds that the description of the ASF Level 1 was not appropriate for the key competencies level 1 and that the ASF levels were too difficult to link to the wide range of achievements found in the Years 11 to 12 school years.

Figure 1: Key area of competence—Profile

Level	Strand 1	Strand 2	Strand 3
4			*
3	*		
2			
1		*	

* Possible profile of individual student achievement across different strands of one key area of competence. (Finn 1991, p.60)

On the topic of assessment of the key competencies, the committee left this as '. . . a matter for individual States and Territories to decide' but stated that the forms of assessment must '. . . be nationally comparable.'

2.3 Mayer committee

2.3.1 Background

Following the recommendations of the Finn committee, the Australian Education Council (AEC) and Ministers of Vocational Education, Employment and Training (MOVEET) established the Mayer committee for the sole purpose of developing the concept of employment-related key competencies proposed by the Finn committee. More specifically, the tasks of the Mayer committee included identifying the key competencies (as opposed to *areas* of key competence as identified by the Finn committee), and developing a means of describing them that would:

> . . . *provide a common reference point for curriculum and teaching in both the school and training sectors and provide the basis for a consistent approach to assessing and reporting achievement.* (Mayer 1992b, p.vii)

Membership of the Mayer committee included representatives and nominees of the Finn committee, the National Training Board, the Commonwealth, the Business Council of Australia, nominees of the State and Territory school and training systems, the National Catholic Education Commission, the Australian Council of Trade Unions, the Australian Vice-Chancellors Committee, the Australian Teachers' Union, and the Independent Teachers' Federation of Australia.

2.3.2 Development of the key competencies

The resulting recommendations of the committee were based on the committee's own expertise, results of consultations and discussions in relation to the committee 's two publications *Employment-related key competencies for post compulsory education and training: A discussion paper* and *Employment-related key competencies: A proposal for consultation*, reports on the attributes required and valued most highly by industry

for entry to the workforce, input through the Preliminary Industry Validation studies, analysis of the generic elements of industry competency standards under development or endorsed by the National Training Board, and over 500 written submissions. The committee also took into account similar overseas work being conducted in the United States by the Secretary of the Department of Labor's Commission on Achieving Necessary Skills (SCANS), in the United Kingdom by the National Council for Vocational Qualifications (NCVQ), and in New Zealand by the Ministry of Education. Overseas reports specifically cited as references included Jessup (1990 & 1991), Ministry of Education (1991), Oates (1991), and Wolf (1991).

To help structure the use of all this advice and information obtained, the committee developed a number of principles upon which the final definition of the set of key competencies would be based. They were:

- **Part of general education, but not the whole**: key competencies are essential elements of a general education but do not displace the broader purposes of general education in developing young people as individuals and members of Australian society.
- **Essential and generic to work in the future**: the set of key competencies should be confined to those capabilities that are essential for young people entering any sector of work in the future, including both unpaid and volunteer work.
- **Of value to all young people regardless of post-compulsory pathway**: the set of key competencies has value for all young people regardless of the pathway they follow in the post-compulsory years.
- **Cross-curricular**: the set of key competencies does not constitute a curriculum or set of subjects, nor do individual key competencies relate only to particular subject areas. Rather, the key competencies can be developed and applied across the range of areas of learning comprising the curricula of school and training programs.
- **Able to be developed in a wide range of settings**: the set of key competencies can be taught and learned through the variety of education and training settings and programs currently available to young people in Australia.
- **Focus on outcomes**: the key competencies describe outcomes of learning rather than processes by which these outcomes may be achieved.
- **Assume a foundation of knowledge, skills and understanding**: the key competencies assume a basis of knowledge, skills and understanding which need to be integrated and applied to achieve a purpose or complete a task.
- **Focus on application**: central to the concept of competence is the application of knowledge, skills and understanding in an integrated way; competencies do not constitute bodies of knowledge as such.

- **Integrated in practice**: the integrated nature of the key competencies and the ways in which they are applied to work activities means that, in practice, they overlap with each other to some extent. (Mayer 1992a p.9)

In addition to these principles, the committee took into account the major outcomes from consultations in relation to the discussion papers. Among these were the consideration of practical consequences for curriculum, teaching, assessment and reporting. This resulted in emphasis from all those consulted to keep the number of things to be assessed and reported in the key competencies to a minimum. Other characteristics strongly supported by consultation were that the key competencies must:

- be essential for preparation for employment;
- be generic to the kinds of work and work organisation emerging in the range of occupations at entry levels within industry rather than occupation- or industry-specific;
- equip individuals to participate effectively in a wide range of social settings, including workplaces and adult life more generally;
- involve integration and application of knowledge and skills;
- be able to be learned;
- be amenable to credible assessment. (Mayer 1992a, p.12 & 1992b, p.8)

During the development of the key competencies, the Mayer committee stated that it would:

> *. . . become possible to identify foundation knowledge, skills and understanding which inform and underpin the set of key competency strands.* (Mayer 1992d p.11)

This foundation knowledge, which would be assumed by the key competencies, includes, for example, the capacity to read, write and say whole numbers and interpret analogue and digital clocks.

2.3.3 The key competencies

Having taken into consideration all these factors, the committee reached a final list of seven key competencies much reduced from its initial proposal:

- **Collecting, analysing and organising information**: the capacity to locate information, sift and sort information in order to select what is required and present it in a useful way, and evaluate both the information itself and the sources and methods used to obtain it.
- **Communicating ideas and information**: the capacity to communicate effectively with others using the range of spoken, written, graphic and other non-verbal means of expression.
- **Planning and organising activities**: the capacity to plan and organise one's own work activities, including making good use of time and resources, sorting out priorities and monitoring one's own performance.

- **Working with others and in teams**: the capacity to interact effectively with other people both on a one-to-one basis and in groups, including understanding and responding to the needs of a client and working effectively as a member of a team to achieve a shared goal.
- **Using mathematical ideas and techniques**: the capacity to use mathematical ideas, such as number and space, and techniques, such as estimation and approximation, for practical purposes.
- **Solving problems**: the capacity to apply problem-solving strategies in purposeful ways, both in situations where the problem and the desired solution are clearly evident and in situations requiring critical thinking and a creative approach to achieve an outcome.
- **Using technology**: the capacity to apply technology, combining the physical and sensory skills needed to operate equipment with the understanding of scientific and technological principles needed to explore and adapt systems. (Mayer 1992a, p.5)

At a later joint meeting of the AEC and MOVEET in July 1993, it was agreed that the list of key competencies be amended by the inclusion of 'cultural understandings'. This key competency is discussed in section 3.3.5.

Thus the number of key competencies currently stands at eight.

2.3.4 Other possibilities

Through consultations, a number of other items were suggested for incorporation in the key competencies.

The arts, family and household management, and cultural understanding were suggested. However, the Mayer committee did not develop these as key competencies in their own right as the committee believed that they did not satisfy the criteria set out in the defining characteristics of key competencies. Nevertheless, the committee claimed that these areas had been incorporated into the list of seven key competencies finally arrived at above.

These claims do not always appear to hold up. For example, although the key competency 'communicating ideas and information' partly incorporates the arts, nowhere is creativity, an essential requirement for competence in the arts, to be found in the key competencies.

With regard to the inclusion of languages other than English as a key competency, the Mayer committee adopted an identical approach to that of the Finn committee, namely, that as a LOTE was not generic to all industries and occupations (and thus did not comply with the definition of key competencies) it was not included in the set. However, as did the Finn committee, the Mayer committee also indicated that a LOTE may, in the future, warrant inclusion in the list of key competencies.

2.3.5 Cultural understanding

A number of attempts were made by the Mayer committee to define cultural understanding as a key competency in its own right, which resulted in three outcomes. First, 'cultural understanding' was identified as a body of knowledge. This description was not consistent with the definition of competence.

A second attempt involved expressing knowledge in terms of 'using' cultural understanding, however, the committee thought that the resulting descriptions were at

> *. . . a level of sophistication far exceeding what could be regarded as expectations of young people in the immediate post-compulsory years* (Mayer 1992d, p.69).

Cultural understanding was also described as being used in specific occupations and industries but this lacked generic application.

It was suggested that cultural understanding might more appropriately be defined by the ways in which it underpins all of the key competencies rather than as a key competency in its own right.

As mentioned earlier, it was later agreed at a joint meeting of the AEC and MOVEET in July 1993 that the list of key competencies be amended by the inclusion of cultural understandings. The development of this eighth key competency was managed by the Queensland Department of Education and the Queensland Vocational Education, Training and Employment Commission for the Commonwealth Department of Employment, Education and Training. In December 1993, an inter-university research consortium organised by the NLLIA Centre for Workplace Communication and Culture began development of the cultural understandings key competency.

Being competent in the cultural understandings key competency will mean having the skills required to handle cultural diversity and to be able to negotiate broad cultural contexts. Examples of using this key competency include not jumping to conclusions about politeness and rudeness when serving an overseas tourist, recognising when an interpreter is needed when interviewing or giving instructions, and checking on common meanings by asking questions and listening to answers when giving directions.

Although cultural understandings has been developed as a key competency in its own right, it is also recognised that it is embedded in all the other seven key competencies identified by the Mayer committee.

2.3.6 Attitude

As part of the second period of consultation, the committee undertook preliminary industry validation studies in several industries across four States to ascertain the appropriateness of the

proposed key competencies for industry. Through these consultations, industry representatives suggested additional skills and competencies.

The most striking of these, which emerged strongly in every interview and discussion, is the attribute of 'having the right attitude.' This was described in many ways, for example:

- having a positive attitude
- being willing to learn
- having a capacity to follow instructions
- having common sense
- being able to take personal responsibility/self-management
- being able to do things from day one. (Mayer 1992a, p.89)

In New South Wales, a workshop comprising representatives from the building and construction industry was held to investigate if 'attitude' could be discerned in the key competencies. Employees having the right attitude were defined as those having:

> *. . . the self-confidence to perform tasks within a reasonable time, to display initiative, and to ask questions when necessary. They have the ability to think through the task ahead, and to foresee consequences of their actions.* (Mayer 1992a, p.89)

This workshop concluded that 'attitude' was implicit in all the key competencies.

This was not supported by findings from Victoria which contradicted the notion that these attitudinal attributes were encompassed in the key competencies. Victorian responses indicated that an additional key competency needed to be formed to address attitude (Mayer 1992a, p.90).

However, as the committee later added the requirements that key competencies be able to be developed by education and training, not require some innate predisposition or adherence to a particular set of values, and be amenable to credible assessment, it therefore deemed that attitudes and values fell outside the set of key competencies. Although the committee did not view attitudes and values as being key competencies *per se*, they did see them as being a function of particular workplace settings which would be reflected in the application of key competencies. For example, the key competency 'working with others and in teams' includes contributing to the good of the group or organisation and being ethical in one's dealings with others.

2.3.7 Other suggestions from the preliminary industry validation study

Other key competencies suggested through the preliminary industry validation study were:

- Motor skills/dexterity
- Creativity
- Cultural awareness
- Understanding the culture of organisations
- Ability to manage stress
- Personal presentation
- Health/physical fitness
- Morality and ethics
- Customer orientation
- Self-organisation/discipline
- Two-way communication skills
- Customer/client satisfaction (Mayer 1992a, p.90)

The committee did not state in its report whether it thought these suggestions were worthy for consideration for addition into the list of key competencies or whether it considered them to be already incorporated in the list of seven key competencies already proposed.

2.3.8 Comparisons with overseas lists

As the Finn committee had done, the Mayer committee referred to lists of generic competencies from overseas developments in the United Kingdom and the United States in arriving at its own list of key competencies, and found that its set of key competencies '... bears marked similarities to developments in other countries.' In addition, the Mayer committee also referred to the development of 'essential skills' in New Zealand.

The Mayer committee deduced that, as its list of key competencies virtually mirrored lists of generic skills identified in other countries, its list was accurate. Provided that the Mayer committee list was arrived at independently, the resulting similarity is intuitive evidence of its validity.

2.3.9 Levels of performance

Having arrived at a 'final' list of key competencies, it was now the Mayer committee's turn to tackle the establishment of levels of achievement, assessment and reporting procedures. Through consultations both overseas, locally, and through the 'discussion paper' and 'proposal for consultation' papers, the committee developed three 'performance levels' which related specifically to the key competencies.

The Mayer committee re-traced the steps of the Finn committee in that it '... explored the possibilities of using levels from the Australian Standards Framework as primary reference points for the performance levels in the key competencies' (Mayer 1992a, p.16) but, as did the Finn committee, found them to be inappropriate. One of the main reasons for this is that the industry competency standards

are described in terms of the requirements of jobs rather than the competencies an individual brings to the job.

The three performance levels derived were:

Performance Level 1: describes the competence needed to undertake activities efficiently and with sufficient self-management to meet the explicit requirements of the activity and to make judgements about quality of outcome against established criteria.

Performance Level 2: describes the competence needed to manage activities requiring the selection, application and integration of a number of elements, and to select from established criteria to judge quality of process and outcome.

Performance Level 3: describes the competence needed to evaluate and reshape processes, to establish and use principles in order to determine appropriate ways of approaching activities, and to establish criteria for judging quality of process and outcome. (Mayer 1992a p.18)

The committee accepted that further development and implementation experiences may require the addition of extra levels lower than Performance Level 1, higher than Performance Level 2, or within the proposed range.

Having established a set of seven key competencies and three performance levels, the committee produced descriptions of each of the key competencies and what abilities were required to be considered competent at each performance level (see Mayer 1992a, pp.20-41).

2.3.10 Assessment

In developing an assessment methodology for the key competencies, the Mayer committee focussed on the use of assessment as evidence of achievement to a potential employer or another education and training provider. It was recommended that assessment and reporting be nationally consistent and be assessed against nationally agreed performance levels. The committee included the following principles for assessment in its recommendations:

- Assessment should be undertaken as an holistic process which integrates knowledge and skills with their practical application.
- Achievement of a given performance level should be based on assessment at that level in at least two different contexts.
- To the maximum extent possible, assessment methods should ensure that students/trainees are not disadvantaged by gender, race, ethnicity, disability, socio-economic status or other social circumstance.

- Assessment procedures should provide for the recognition of key competencies, no matter how, where or when they have been acquired.
- Assessment procedures should be designed so that, as far as possible, assessments of the key competencies are undertaken as part of, or in conjunction with, assessments undertaken for other purposes. (Mayer 1992a p.49)

2.3.11 Transferability

The requirement that achievement of a given performance level be assessed in at least two different contexts came about from the notion of transferability which was given much attention in consultations. Although the committee was aware of research showing learning to be context bound, the committee still sought to:

> *. . . reflect the notion of transferability in the principles for assessment of the key competencies by requiring that assessment at a given performance level be based on demonstrated performance at that level in a range of contexts. (Mayer 1992a, p.46)*

The committee did not want to give a firm definition of 'difference in context' until the operational implications of this principle had been explored through field testing of the implementation of the key competencies. However, the committee did suggest that different contexts 'might be defined as different subjects or physical settings.' (Mayer 1992a, p.46). Until a specific definition is reached, it will remain unclear as to over what range of contexts the key competencies will be expected to be transferable.

2.3.12 Conclusions

The Mayer committee concluded by recommending that further work be conducted to further validate and establish benchmarks for the performance levels and that States and Territories field test the implementation of key competencies and their assessment.

The committee's report was received by the AEC and MOVEET in September 1992 who endorsed the definition and set of key competencies and agreed to the field testing.

2.4 General criticisms of the set of key competencies

A number of dissatisfactions with the proposed introduction of key competencies have been expressed. Many claim that significant omissions in the list of key competencies have occurred, principally, cultural understanding, attitudes and values, creativity, and languages other than English.

The key competency 'cultural understandings' was later developed and included in the list of key competencies, thus overcoming the earlier criticisms of its omission.

As discussed above, industry representatives through submissions and consultations argued strongly for the addition of attitudes and values as a key competency. The importance of attitude as a requirement of competence has been regularly stated in the literature. For example, Stasz et al. (1990, p.v) stated that if people are not motivated for work, their basic or complex skills will be wasted. The title of Kingsland and Cowdroy's (1993) paper 'Competence without attitude is not competence' summarised their view that:

> *Particular sets of attitudes are essential to the effective application of professional competencies to satisfy employer expectations and societal needs.* (p.201)

Others have argued that:

> *. . . the notion of key competencies spells doom for general education, the abandonment of knowledge and even a decline in standards of literacy and knowledge.* (Borthwick 1993, p.31)

More fundamentally, it has been argued that there is no specific need to introduce key competencies into the school curriculum as they are already there. Considering that there are many people effectively participating in work, further education and adult life more generally (and who therefore, by definition, must possess the key competencies) who have not been explicitly taught the key competencies in their education, the above argument deserves further consideration.

3 The development of generic competencies in New Zealand

3.1 Background

The emphasis on development of essential skills in New Zealand has been prompted primarily from New Zealand's desire to achieve a better placing in the international economic arena and to ensure that :

> *. . . all young people gain the knowledge, skills, understanding, and attitudes which will enable them to contribute fully and effectively to New Zealand's future and the well-being of its society.* (Department of Education 1986, p.102)

To help New Zealand attain these goals, it was proposed that the school curriculum include:

> *. . . certain generic skills which are found across a range of subjects, such as study and research skills, practical and social skills, and especially those skills which help prepare students for the transition from school to adult and working life, or tertiary study.* (Department of Education 1986, p.84)

3.2 Committee of Inquiry into Curriculum, Assessment, and Qualifications in Forms 5 to 7

In identifying the required changes to the curriculum, the Department of Education's Committee of Inquiry into Curriculum, Assessment and Qualifications in Forms 5 to 7 (Department of Education 1986, p.48) in conjunction with the Committee to Review the Curriculum for Schools, sought submissions on the wider issues of curriculum, assessment and certification in forms 5 to 7 via a discussion booklet entitled *Assessment and awards in the senior secondary school* which was released in October 1985. Many of these submissions referred to a broad range of general personal, social, and intellectual skills which are considered vital for young people moving into the adult world. In particular, many submissions stressed that schools have a major responsibility to prepare students for the world of work.

Instead of prescribing a list of compulsory subjects, the committee grouped what it considered should be learned under headings with the intention that students study something under each heading at some time during their secondary schooling. It was proposed that:

> . . . *eight areas of knowledge . . . together with skills, attitudes and values which permeate all learning, form the foundation of the common curriculum of all students up to the end of Form 5.* (Department of Education 1986, pp.46-47)

The areas of knowledge and skills proposed were:

1 Knowledge which helps students to understand and be confident in their own culture and in the culture of Aotearoa/New Zealand, and to be sensitive to that of others.

2 Knowledge which develops students' confidence and ability in language.

3 Knowledge which develops students' confidence and ability in mathematics.

4 Knowledge which develops students' understanding of the physical, biological, and technological world and how people interact with and influence their environment.

5 Knowledge which develops students' confidence and ability to express themselves creatively through artistic, practical, and physical activities, and to appreciate the creativity of others.

6 Knowledge which develops students' understanding of their own and others' growth.

7 Knowledge which develops students' understanding of how individuals and groups relate to each other and work together in social, political, and economic ways.

8 Knowledge which develops students' confidence in handling the day-to-day practicalities of their own lives.

In addition to the knowledge assumed in each of these areas, a range of skills which enable students to acquire and apply their knowledge form an integral part of the proposal of the committee . . . These include skills such as those associated with problem solving, reasoning, study, research, organisation, and evaluation, and creative and expressive skills, interpersonal skills, and practical skills. (Department of Education 1986, pp.47-48)

This approach thus not only placed importance in the acquisition of skills *per se* but placed particular emphasis on the acquisition of certain areas of knowledge.

3.3 New Zealand Planning Council

In a paper released in January 1991, the New Zealand Planning Council (NZPC) identified two major industry groups that would dominate New Zealand's new economy, namely, the business services and finance sectors; and the wholesale trade, retail trade, restaurants and hotels sectors. The NZPC (1991, p.15) identified the generic skills required within these two industry groups as:

> Ability to continue learning/adapting throughout life
> Communication/interpersonal skills
> Information skills
> Business/managerial skills
> Technology/computer skills
> Language skills
> Thinking/creative/problem solving
> Number skills. (NZPC 1991, p.15)

These skills were also identified as being increasingly needed in all areas of the economy.

Although many in New Zealand argued for improvement in specialist skills, particularly in emerging high technology, the NZPC (1991) stated that:

> *. . . for New Zealand as a whole to be successful in the new economy, everyone needs to lift their level of base generic skills . . . Specialist skills . . . need to be continually built on this base.* (p.16)

3.4 The Ministry of Education's essential skills

The Ministry of Education, in its consultative document *The National Curriculum of New Zealand: A discussion document* (Ministry of Education 1991), proposed a curriculum with a fundamental base consisting of seven essential learning areas, seven essential skills, and assessment methods. As a result of consultations the list of essential skills were modified and increased to eight in number. The resulting essential skills given in the *New Zealand Curriculum Framework* document (Ministry of Education 1993) were:

Communication skills
Students will:

- communicate competently and confidently by listening, speaking, reading, and writing, and by using other forms of communication where appropriate;
- convey and receive information, instructions, ideas and feelings appropriately and effectively in a range of different cultural, language, and social contexts;

- develop skills of discrimination and critical analysis in relation to the media, and to aural and visual messages from other sources;
- argue a case clearly, logically and convincingly;
- become competent in using new information and communication technologies, including augmented communication for people with disabilities.

Numeracy skills
Students will:
- calculate accurately;
- estimate proficiently and with confidence;
- use calculators and a range of measuring instruments confidently and competently;
- recognise, understand, analyse, and respond to information which is presented in mathematical ways, for example, in graphs, tables, charts, or percentages;
- organise information to support logic and reasoning;
- recognise and use numerical patterns and relationships.

Information skills
Students will:
- identify, locate, gather, store, retrieve, and process information from a range of sources;
- organise, analyse, synthesize, evaluate, and use information;
- present information clearly, logically, concisely, and accurately;
- identify, describe, and interpret different points of view, and distinguish fact from opinion;
- use a range of information-retrieval and information-processing technologies confidently and competently.

Problem-solving skills
Students will:
- think critically, creatively, reflectively and logically;
- exercise imagination, initiative, and flexibility;
- identify, describe, and redefine a problem;
- analyse problems from a variety of different perspectives;
- make connections and establish relationships;
- inquire and research, and explore, generate and develop ideas;
- try out innovative and original ideas;
- design and make;
- test ideas and solutions, and make decisions on the basis of experience and supporting evidence;
- evaluate processes and solutions.

Self-management and competitive skills
Students will:
- set, evaluate, and achieve realistic personal goals;
- manage time effectively;
- show initiative, commitment, perseverance, courage, and enterprise;
- adapt to new ideas, technologies, and situations;

- develop constructive approaches to challenge and change, stress and conflict, competition, and success and failure;
- develop the skills of self-appraisal and self-advocacy;
- achieve self-discipline and take responsibility for their own actions and decisions;
- develop self-esteem and personal integrity;
- take increasing responsibility for their own health and safety, including the development of skills for protecting the body from harm and abuse;
- develop a range of practical life skills, such as parenting, budgeting, consumer, transport, and household maintenance skills.

Social and co-operative skills
Students will:
- develop good relationships with others, and work in co-operative ways to achieve common goals;
- take responsibility as a member of a group for jointly-decided actions and decisions;
- participate appropriately in a range of social and cultural settings;
- learn to recognise, analyse, and respond appropriately to discriminatory practices and behaviours;
- acknowledge individual differences and demonstrate respect for the rights of all people;
- demonstrate consideration for others through qualities such as integrity, reliability, trustworthiness, caring or compassion (aroha), fairness, diligence, tolerance (rangimarie), and hospitality or generosity (manaakitanga);
- develop a sense of responsibility for the well-being of others and for the environment;
- participate effectively as responsible citizens in a democratic society;
- develop the ability to negotiate and reach consensus.

Physical skills
Students will:
- develop personal fitness and health through regular exercise, good hygiene, and healthy diet;
- develop locomotor, non-locomotor, and manipulative skills;
- develop basic first aid skills;
- develop specialised skills related to sporting, recreational, and cultural activities;
- learn to use tools and materials efficiently and safely;
- develop relaxation skills.

Work and study skills
Students will:
- work effectively, both independently and in groups;
- build on their own learning experiences, cultural backgrounds and preferred learning styles;
- develop sound working habits;
- take increasing responsibility for their own learning and work;

- develop the desire and skills to continue learning throughout life;
- make career choices on the basis of realistic information of self-appraisal (NZQA 1993b, pp.24-27).

The NZQA (1993) stated that:

> The ***essential skills*** identified in the *New Zealand Curriculum Framework* are very similar to other lists developed overseas and by bodies such as the NZ Planning Council, the New Zealand Employers Federation and by teachers for the *New Zealand Record of Achievement* project. (p.9)

The essential skills are not intended to be developed in isolation, rather, to be developed through the essential learning areas and in different contexts across the curriculum. In turn, the seven essential learning areas describe in broad terms the knowledge and understanding which all students need to acquire. The seven essential learning areas identified were language and languages, mathematics, science, technology, social sciences, the arts, and health and physical well-being.

It was claimed by the Ministry of Education (1993) that the above list of essential skills will:

> . . . *encompass other important groups of skills, such as creative skills, valuing skills, and practical life skills.* (p.17)

Attitudes and values were not developed as essential skills in their own right (as for the Australian key competencies and United Kingdom core skills) but were considered an 'integral part of the New Zealand Curriculum.'

3.5 Implementation of the essential skills

The NZQA proposes to incorporate the essential skills into the National Qualifications Framework (NQF) currently being implemented which comprises eight levels of progression. It has been suggested that the essential skills will not all possess the same number of levels in the NQF. Some may only be represented at the first level whilst others would extend through the NQF.

There is still much discussion on how the essential skills could be recognised within the NQF. The four main models being considered are the separation, adjunct, integrated and combination models.

The separation model proposes that separate assessment and reporting of the essential skills with no direct linkage to the NQF. For the adjunct model, essential skills would be developed into units at appropriate levels of the NQF and would be contextually free. As

pointed out by the NZQA, the main disadvantages would be the difficulty in setting context-free standards and the risk that essential skill units would not be delivered in conjunction with relevant subject domain units. This latter point would also hinder the transferability of many essential skills.

The integrated model proposes identification of elements (learning outcomes within a unit) within each of the skills areas. For example, the 'communication skills essential skill' comprises of the elements listening, reading and writing et cetera. Each element would be assigned to a NQF level. Instead of arranging these elements into units, developers of subject domain units would select appropriate elements for integration in units in their own subject domain. The main advantage of this model is that the essential skills would be developed within one or more relevant contexts. This would help promote the transferability of the essential skills.

The combination model combines features of the adjunct and integrated models. Instead of large units being developed for each of the essential skills, they would be broken down into smaller units. Thus several units may be required to cover all components of an essential skill. These smaller units could then be linked to domain-specific units to provide a context. Domain-specific units would specify certain essential skill units as co-requisites. This model also allows for the development of essential skills within more than one context.

4 Comparing the lists of generic skills

In mapping the Australian key competencies against overseas lists of generic skills including those of New Zealand (table 1), the Mayer committee (1992a, p.15) found that each Australian key competency was duplicated in the New Zealand essential skills and vice versa. Similarly, Kearns et al. (1993, p.31), in a comparative study of the Australian and New Zealand vocational education and training systems, mapped the Australian key competencies against the New Zealand essential skills and came up with a result identical to that of the Mayer committee except for one important difference, namely, that:

> Only 'using technology' from the Mayer committee list has no counterpart in the New Zealand essential skills list (Kearns et al. 1993, p.30).

This latter viewpoint was also the finding of the NZQA (1993, p.10). Neither gave reasons for this view, however, from the Mayer committee 's description of 'using technology' it is clear that this key competency would be only partly covered by the New Zealand essential skills 'information skills' and 'communication skills'.

After these comparisons were made, an eighth essential skill, 'physical skills', was added, this skill having no equivalent in the list of Australian key competencies. The essential skill physical skills would have been covered by the Australian key competencies had the Mayer committee included the competencies 'motor skills/dexterity' and 'health/physical fitness' as suggested through the preliminary industry validation study.

Another post-Mayer addition was also made to the list of Australian key competencies, namely, 'cultural understandings'. This competency is not specifically identified in any other country's list of generic competencies, although it is covered to some degree in other generic competencies mentioned. For example, the New Zealand 'social and co-operative skills' essential skill requires one to 'participate appropriately in a range of social and cultural settings' and to 'acknowledge individual differences and demonstrate respect for the rights of all people.'

The SCANS 'interpersonal skills' competency also covers elements of the Australian 'cultural understandings' key competency by requiring one to '. . . work well with men and women from diverse

Table 1: Comparative table of generic competencies lists

Australian key competencies	UK (NCVQ) core skills	US (SCANS) workplace know-how	NZ essential skills
Mayer committee mapping:			
• Collecting, analysing and organising information	• Communication	• Information • Foundation skills: basic skills	• Information skills
• Communicating ideas and information	• Communication • Personal skills: improving own learning and performance	• Information • Foundation skills: basic skills	• Communication skills
• Planning and organising activities	• Personal skills: improving own learning and performance	• Resources • Foundation skills: personal qualities	• Self-management skills • Work and study skills
• Working with others and in teams	• Personal skills: working with others	• Interpersonal skills	• Social skills • Work and study skills
• Using mathematical ideas and techniques	• Numeracy: application of number	• Foundation skills: basic skills	• Numeracy skills
• Solving problems	• Problem solving	• Foundation skills: thinking	• Problem-solving and decision-making skills
• Using technology	• Information technology	• Technology • Systems	• Information skills • Communication skills
	• Modern foreign language		
Post-Mayer additions:			
• Cultural understandings			• Physical skills

Note: For the Mayer committee mapping, where the UK core skills, US workplace know-how and NZ essential skills are comparable with more than one key competency they have been repeated.

backgrounds,' where diverse backgrounds can include different cultural backgrounds.

One other obvious difference in comparing the lists of generic competencies is the United Kingdom's core skill 'modern foreign language' which is not a specific requirement in any other country's list of generic competencies. Although the Mayer committee did not include languages other than English as a key competency due to the fact that they were not considered generic to all industries and occupations, it was recognised that inclusion may be warranted in the future.

5 Overseas developments

5.1 England and Wales

5.1.1 Development of the core skills

The Secretary of State for Education (the Rt Hon. Kenneth Baker) in a speech dated February 1989, outlined the merits of incorporating core skills across the curriculum. He considered these skills fundamental to the future needs of all young people and adults:

> *We want to equip young people with the knowledge and skills so that they have greater chances. In the changing employment world they will need broadly based qualifications. . . . As I see it, there are a number of skills . . . which young people and adults in future will all need. They could be expressed as a list of core skills . . .* (Baker 1989)

A tentative listing of core skills was produced in November 1989 by the Confederation of British Industry (CBI) in its strategy document *Towards a skills revolution* (CBI 1989). The core skills identified were:

- values and integrity
- effective communication
- applications of numeracy
- applications of technology
- understanding of the world of work and the world
- personal and interpersonal skills
- problem-solving
- positive attitude to change.

A revised list of core skills was proposed by the National Curriculum Council (NCC) in March 1990 in response to the Secretary of State Education's request to find which core skills could be defined and incorporated into the study programmes of 16-19 year-olds taking A/AS courses. The revised list comprised:

- communication
- problem-solving
- personal skills
- numeracy
- information technology
- competence in a modern language.

This list of core skills was endorsed in April 1990 in the National Council of Vocational Qualification's (NCVQ) report *Common learning outcomes: Core skills in A/AS levels and NVQs* (Jessup 1990). The means by which core skills could be incorporated into National Vocational

Qualifications (NVQs) as well as A/AS levels in order to enhance occupational competence and opening a bridge between the 'academic-vocational divide' were also confronted in this report.

It is interesting to note that the recommendation by industry for the adoption of values, integrity and a positive attitude to change as core skills was not heeded by the National Curriculum Council (NCC), NCVQ or the Schools Examinations and Assessment Council (SEAC) in their lists of proposed core skills. This development virtually mirrors that in Australia whereby the Mayer committee excluded values and attitudes from the list of key competencies despite industry arguing strongly for their inclusion.

In developing the core skills, the NCVQ proposed that only the communication, problem-solving and personal skills core skills would be relevant to all the NVQs (these qualifications being vocationally specific) whilst the core skills of numeracy, information technology and competence in a modern language would only be relevant to particular NVQs where necessary for occupational competence. Thus, unlike in Australia where the key competencies, by definition, apply to work generally, the core skills may be occupation specific.

Further, the NCVQ also proposed that the core skills would normally be developed and assessed within an occupational area providing they were an integral part of occupational competence implying that core skills were to be considered context bound.

Continuing the development of the core skills, the SEAC and NCVQ, in consultation with a number of other educational bodies and selected lead bodies (in business administration, caring, engineering and construction) defined each core skill and developed detailed specifications of five of the six core skills at four levels of attainment. The sixth core skill, that of competence in a modern language, was delayed pending the outcome of discussion in this area.

Exemplification exercises were carried out by NCVQ and SEAC to test the adequacy and clarity of the core skill specifications and examined the issues associated with implementation within A/AS and NVQ certification.

After further refining, defining and development, in August–September 1991 proposals took shape for incorporating core skill units into the general NVQ specifications and for possible grading systems for general NVQs. The next phases of development were further refining the units, developing assessment methods, and piloting the units.

The core skill units developed have the same format as the pre-existing NVQs and GNVQs and were initially expressed at four levels of attainment but later revised to provide five levels of performance (compared with three levels of attainment proposed by the Australian

Mayer committee). These core skill levels relate approximately with levels one to five of the NVQ framework:

Level 1: Foundation
Level 2: Craft
Level 3: Technician/supervisor
Level 4: Higher technician/junior management
Level 5: Professional/managerial. (Smithers 1993, p.8)

Further, the development and assessment of core skill units will be designed to integrate into the pre-existing NVQs and GNVQs—there are no separate stand-alone 'core' NVQs. For example, appropriate core units in the core skill 'communication' can readily be incorporated into caring NVQs and 'health and social care' GNVQs alongside the vocationally specific units which make up these awards.

A general definition of each of the core skills follows:

- **Communication**: the ability to interpret and use language, including images, for a variety of purposes, through reading, writing, speaking and listening.

- **Problem solving**: the ability to define problems and to devise and evaluate solutions.

- **Personal skills**: the ability to:
  - take increasing responsibility for improving one's own learning and performance
  - work effectively with others in groups of different sizes.

- **Numeracy–application of number**: the ability to use numerical operations (with the aid of calculators or other devices when appropriate) for the purposes of processing, interpreting and presenting numerical data.

- **Information technology**: the ability to use information technology to store, organise, present, process and analyse information for a variety of purposes including data retrieval, communication, problem solving and the investigation of ideas (NCVQ 1991b).

The sixth core skill, 'modern foreign language', differs from the preceding five and it is proposed that it should be treated separately. Units are being developed within the NVQ system for the generic use of modern foreign languages.

Each of the core skills having been described at five levels of performance, they were then further specified in more detailed units at each level. A total of thirty core skill units were developed.

As the core skill units take on the same form as the NVQ and GNVQ units, they are expressed as outcomes and have a title, elements,

performance criteria, range statements and in some cases evidence requirements. For example, the core skill 'application of number' is made up of three elements at level five, namely:

5.1 Gather and process data using group 1,2,3,4 & 5 mathematical techniques.
5.2 Represent and tackle problems using group 1,2,3,4 & 5 mathematical techniques.
5.3 Interpret and present mathematical data using group 1,2,3,4 & 5 mathematical techniques.

In turn, element 5.2, for example, is further broken down into performance criteria and range statements:

Element 5.2

1 Techniques appropriate to the task are selected and used by the individual.
2 Activities required by the techniques are performed to levels of precision and in the correct sequence.
3 Reasonable estimates are made in order to verify the results of calculations.
4 Calculations and results obtained are correct.
5 Aids are used correctly.
6 Conclusions/generalisations/predictions drawn from results are valid.
7 Clear justification is given for the interpretation of results.

Range
Group 1 techniques: using addition, subtraction, multiplication and division; using fractions, decimals or percentages to describe situations; using simple formulae expressed in words; finding perimeters, areas and volumes; using two-dimensional co-ordinates.
Group 2 techniques: finding areas of plane shapes, volumes of simple solids, and the area and circumference of circles; solving simple equations; calculating with fractions, percentages and ratios.
Group 3 techniques: solving equations or simple inequalities; using symbolic notation to express the rules of sequences; using Pythagoras' theorem; carrying out calculations in plane and solid shapes; using co-ordinates to locate position in 3D.
Group 4 techniques: expressing general laws in symbolic form; using standard form; manipulating algebraic formulae, equations or expressions; co-ordinating a number of features or variables in solving problems; solving equations using graphical methods.
Group 5 techniques: calculating the probability of any two events happening; solving problems in 2D or 3D.

5.1.2 Assessment

Assessment of the core skills is to be integrated with the assessment of the NVQs which no longer places the emphasis on written examinations. A wide variety of assessment methods appropriate to what is being assessed will be employed. A greater prominence will be given to the assessment of performance rather than knowledge and principles as has been the case in the past. However, this will not be '...at the expense of knowledge and principles, which are also vital if people are to understand what they are doing and be able to adapt to changing circumstance and new situations' (NCVQ 1993, p.5).

The primary methods of assessment consist of performance evidence, supplementary evidence, and evidence from prior achievements. Performance evidence includes natural observation in the workplace; extracted examples in the workplace; and simulations (competency tests, skills tests, proficiency tests, projects/assignments etc.). Supplementary evidence will take the form of oral questioning; open written answers; and multiple-choice tests. Evidence of prior achievements may also be obtained via reports, designs, computer programmes, certificates from other sources etc (NCVQ 1993, p.5).

One of the main criticisms of the NVQ assessment procedures is the move away from written examinations:

> *. . . because of the disregard amounting to disdain for 'knowledge', there are no conventional written examinations. Indeed in the case of NVQs, there are no compulsory written tests at all.* (Smithers 1993, p.9)

> *They [the core skills] are neither independently assessed nor assessed separately from the competencies. Thus, whether a plumber can calculate the necessary slope for a drain of particular length is inferred from how he installs the drain, not from whether he can do the necessary calculations.* (Smithers 1993, p.17).

Smithers (1993) claims that the British move in abandoning written examinations is seen as incomprehensible in Germany, where there is a strong emphasis on traditional assessment techniques, as there still is in Holland as well.

5.1.3 Transferability

One of the intentions of setting up the NVQ and GNVQ framework was to provide for certificating common achievements in a range of contexts, namely, schools, further education, and other vocational training and work. Thus if a person attains a skill in one of these contexts which equates to another context, then they ought to gain credit for the skill in the other context. Thus the transferability of skills is embedded in the NVQ/GNVQ framework.

Unlike the development of the Australian key competencies and the New Zealand essential skills, where no explicit definition of transfer or transferability was given, Oates (1990), in his review of the development of core skills, cited the following definition of transfer:

> *. . . the phenomenon whereby an individual is more effective in a new situation as a result of previous acquisition of skill or where a new skill is learned more rapidly as a function of previous learning.* (Annett 1989)

Questions which naturally follow are just how more effective in the new situation does a person have to be, or how more rapidly does a new skill have to be learned, in order to rightly claim that transfer has occurred?

Although the development of skills that underpin performance in a wide range of situations was of fundamental significance in constructing the core skills, the developers were well aware of the problems related to transferability:

> *Teaching the basic skills abstracted from the contexts in which they are applied does not always prepare young people to practise them in the real world. Developing them in context does not always lead to individuals being able to transfer them to new and different contexts.* (Oates 1991, p.2)

Some broad assumptions have been put forward by Oates (1991), including:

> *At a common-sense level most people would probably accept that communication and numeracy are likely to be generalisable to different contexts. Problem solving, however, has not always been viewed as a set of common skills and processes that are generalisable.* (p.5)

Using communication as an example, it was explained that transfer of communication skills to a new context does not mean that proficiency in the new context would occur immediately, rather, that those possessing core communication skills would be able to put into practice and become proficient in communication skills in the new context more rapidly than those not in possession of the core communication skills.

5.2 Scotland

Similar to England's general NVQs, Scotland has in place a framework of Scottish Vocational Qualifications (SVQs) which also incorporate core skill strands. Five core skills have been identified in Scotland and are virtually identical to the list of core skills identified in England and Wales, except that competency in a modern foreign language was not included:

- communication
- personal and interpersonal
- problem solving

- numeracy
- information technology. (Scottish Office Education Department 1991)

The core skills were defined as 'those abilities which are fundamental in a wide range of life roles and particularly in employment' and have three levels of attainment within the Scottish Vocational Qualifications (SVQs) administered by the Scottish Vocational Education Council.

5.3 United States

As part of President Bush's 'America 2000 Education Strategy' formed in 1990 to 'close the skills and knowledge gap' of Americans, the Secretary's Commission on Achieving Necessary Skills (SCANS) was set up by the United States Department of Labor to specifically advise the secretary on the level of skills required to enter employment. This was prompted by findings such as:

> *. . . more than half of our young people leave school without the knowledge or foundation required to find and hold a good job.* (SCANS 1991, p.v)

In order to identify the skills required across industries and in the new patterns of work found in 'high performance' organisations, SCANS established six special panels to examine jobs ranging from manufacturing to government. Researchers were also commissioned to conduct interviews with workers in a wide range of jobs.

After twelve months of work, SCANS had identified a set of eight competencies and skills shared by all workers which they labelled 'workplace know-how'.

Workplace know-how comprises of five competencies and a three-part foundation that 'lie at the heart of job-performance'. The three-part foundation of intellectual skills and personal qualities are part of each of the five competencies. Therefore, competence must be first attained in the foundation before competence can be achieved in any of the five competencies. The three-part foundation skills are:

Basic skills:
- Reading
- Writing
- Arithmetic
- Mathematics
- Listening
- Speaking

Thinking skills:
- Creative thinking
- Decision making
- Problem solving
- Seeing things in the mind's eye
- Knowing how to learn
- Reasoning

Personal qualities:
- Responsibility
- Self-esteem
- Sociability
- Self-management
- Integrity/honesty

and the five competencies are:

Resources:
- Allocates time
- Allocates money
- Allocates material and facility resources
- Allocates human resources

Interpersonal:
- Participates as a member of a team
- Teaches others
- Serves clients/customers
- Exercises leadership
- Negotiates
- Works with cultural diversity

Information:
- Acquires and evaluates information
- Organises and maintains information
- Interprets and communicates information
- Uses computers to process information

Systems:
- Understands systems
- Monitors and corrects performance
- Improves and designs systems

Technology:
- Selects technology
- Applies technology to task
- Maintains and troubleshoots technology.

These eight requirements were considered essential preparation for all students either going directly into the workforce or continuing with further education thus making them similar, by definition, to the Mayer committee's key competencies which were defined to be '. . .

not only essential for effective participation in work but are also essential for effective participation in further education . . .' (Mayer 1992a, p.7).

The integrated nature of these eight competencies was also emphasised:

> *Seldom does one of these eight components stand alone in job performance. They are highly integrated and most tasks require workers to draw on several of them simultaneously.* (SCANS 1991, p.vi)

It is intended that the competencies will be incorporated into existing school subjects. Further, they are not intended for any specific educational stream, for example 'general' or 'vocational' education, rather, all teachers in all disciplines will be expected to incorporate them into their classwork.

Although SCANS saw the identified competencies as applying '. . . from the shop floor to the executive suite', they believed:

> *. . . after examining the findings of cognitive science, that the most effective way of learning skills is 'in context', placing learning objectives within a real environment rather than insisting that students first learn in the abstract what they will be expected to apply.* (SCANS 1991, p.xv)

This suggests that SCANS, unlike the Mayer committee in Australia, does not require the 'workplace know-how' skills to be transferable.

Instead of specifying competencies at various numeric levels of achievement as has been the case in many countries including Australia and England, SCANS has proposed five levels of proficiency as follows: preparatory; work-ready; intermediate; advanced; and specialist (SCANS 1991, p.25). SCANS also stated that proficiency in each competence requires proficiency in the foundation. This is similar to the Mayer committee's key competencies assuming a 'foundation of knowledge, skills and understanding' (Mayer 1992d, p.11).

At the release of its *What work requires of schools* report, SCANS was considering the major issues involved in creating an assessment system for the foundation and the competencies. However, the assessment process will not ultimately be developed by SCANS.

5.4 Canada

Canada first began to focus on the concept of key competencies when the Steering Group on Prosperity identified the following:

- Too many young people are still not ready for school and too many are leaving school ill-equipped for work.
- Too many adults are permanently sidelined by a lack of skills.

Within the Strategy for Prosperity, the following goals were set to overcome the above deficiencies:

- Reorient our educational systems so that they focus on results.
- Improve the performance and accessibility of our learning systems so that more Canadians have the chance to acquire necessary skills and knowledge.
- Strengthen the links between schools and the workplace so that students are better equipped to enter the world of work.

Included in a number of key recommendations was the development of a competence-based education and training system where success is defined by measurable skills. As for key competencies:

> *There is growing interest in defining our expectations for our learning systems and in defining key skills and competencies we expect people to have acquired at various stages of their education and training.*
> (Steering Group on Prosperity, n.d., p.36)

One of the earlier educational bodies in Canada to introduce a skills-based approach to education was the Georges Vanier Secondary School in Ontario in 1988. Staff of the school consulted with representatives from business, industry, labour and post-secondary institutions as well as parents and students to identify specific skills students should acquire before graduating. The areas identified were:

- problem-solving skills
- communication skills
- personal skills
- application skills (computers, technology & telecommunications).

This list is almost identical to the list of core skills identified in England, Wales and Scotland.

5.5 Germany

Due to changing demands being made on skilled workers in Germany because of new technologies and manufacturing processes, the German Federal Ministry of Education and Science sponsored a pilot project conducted by Siemens Aktiengesellschaft to develop *Pro*ject and *T*ransfer oriented T*ra*ining (PETRA).

As part of PETRA, a number of 'core skills' were identified, these skills being defined as those skills required by specialists over and

above technical ones. The core skills along with examples of essential individual qualities are (Siemens 1990):

1 Organising and carrying out the practice task
- Determination
- Accuracy
- Systematic course of action
- Organisational ability
- Co-ordinative ability

2 Communication and co-operation
- Open mindedness
- Ability to co-operate
- Intuition
- Appropriate behaviour towards customer(s)

3 Application of learning techniques and interrelated thought processes associated with the work in question
- Using learning techniques
- Deductive thinking
- Transferability
- Thinking in systems

4 Independence and responsibility
- Involvement
- Reliability
- Acting prudently
- Ability to criticise oneself
- Putting forward one's own opinion

5 Ability to work under stress
- Ability to concentrate
- Perseverance
- Adaptability

Unlike the New Zealand essential skills and the Australian key competencies, where transferability is principally an implicit requirement or desired outcome, transfer is to be taught explicitly as part of the PETRA core skills, particularly in relation to the core skill 'application of learning techniques and interrelated thought processes'. This explicit teaching of transfer, called 'transfer-orientation', is designed to:

> *. . . teach trainees to apply what they have learned to different and new situations and to fall back on what earlier experience has taught them.* (Siemens 1990)

It is not clear whether or not 'new situations' implies transfer of knowledge and skills across contexts or only within contexts.

Another main focus of PETRA is to train students to self-regulate their learning.

6 Summary

The development of the Australian key competencies and the New Zealand essential skills, along with other overseas generic competency developments, has emerged primarily to address the requirements of a modern workforce and to ensure that people are equipped to participate effectively in modern society.

Most countries' lists of competencies or skills that have been identified as being generic or essential for effective participation in society or the modern workforce are similar. All cover the areas of communication; collecting, analysing and organising information; planning and organisation; interpersonal and social skills; numeracy skills; problem solving; and technological skills. The development of the Australian key competency 'cultural understandings' is unique, in that no other country has specifically developed cultural understandings as a generic skill in its own right, although other countries' generic skills do cover many of the aspects identified in this key competency.

On the other hand, Australia's list of key competencies has no equivalent of the United Kingdom's 'modern foreign language' core skill or New Zealand's 'physical skills' essential skill. However, during the development of the list of key competencies the Mayer committee did indicate that languages other than English may, in the future, warrant inclusion in the list of key competencies.

Although industry in Australia argued strongly for the development of attitudes and values as a key competency, this idea was rejected by the Mayer committee in developing the key competencies. This outcome is virtually identical to the situation in the United Kingdom where, despite industry recommending the adoption of values, integrity and a positive attitude to change as core skills, neither the National Curriculum Council, National Council for Vocational Qualifications, nor the Schools Examinations and Assessment Council included these suggestions in their proposed lists of core skills.

The way in which generic competencies are defined in each country also varies. In Australia, the key competencies are defined as competencies satisfying a number of conditions, some of which are open to wide interpretation. The definition of the New Zealand essential skills is a closed one in that they are defined as a specific list of skills, whilst overall definitions are not given for the United Kingdom's core skills or the United States' generic competencies, rather, each skill or competency is defined individually.

Each country developing generic competencies has generally identified a single list of generic competencies except for the United States' workplace know-how which comprises five competencies and a three-part foundation, competence being required in the foundation before competence can be achieved in any of the five competencies.

Another difference in the nature of generic competencies identified in each country is the degree to which they are considered generic. In Australia and New Zealand, all the key competencies and essential skills are deemed to be fundamental and essential to all occupations and thus essential for everyone to acquire. On the other hand, in the United Kingdom, only the communication, problem-solving and personal skills core skills are seen to be relevant to all National Vocational Qualifications (NVQs) (these qualifications being vocationally specific) whilst the numeracy, information technology and modern foreign language core skills are seen to be relevant to only particular NVQs where necessary for occupational competence.

Transferability is one of the areas least clearly discussed with respect to generic competencies. Although most developers of generic competencies desire their transferability to be maximised, they are becoming increasingly aware that the transferability of generic competencies from one context to another cannot be assumed. As a result, transferability is increasingly viewed as a desired outcome of generic competency acquisition rather than a definitional requirement. Rather than defining generic competencies to be transferable across contexts, there is now a greater emphasis in seeking teaching methods that will enhance the transfer of these competencies.

Reporting and assessment structures for generic competencies are still at the developmental stage in most countries developing these competencies. Australia, along with the United States, is developing an assessment and reporting structure which is independent of qualifications and curriculum structures already in place. On the other hand, New Zealand and the United Kingdom are integrating generic skill assessment and reporting systems into pre-existing qualification frameworks.

Each of the Australian key competencies was described at three performance levels, these levels not being linked to the pre-existing Australian Standards Framework. On the other hand, it has been proposed that the New Zealand essential skills be linked to the National Qualifications Framework which consists of eight levels. However, all the essential skills would not be represented at the same number of levels, some may be represented only at the first level whilst others may represented in all eight levels. Both the United Kingdom's core skills and the United States' workplace know-how competencies are described at five levels of proficiency.

The way generic competencies are to be delivered in the curriculum appears to be similar for all countries developing generic competencies, in that they will be integrated into existing subjects —generic competencies will not be taught as subjects in their own right.

The future of generic competency development depends on the successful introduction of assessment and reporting systems and structures which are still being developed. One of the main concerns here is the extra workload that will be created for teachers and administrators. Another problem is to ensure national consistency in reporting, particularly in countries such as Australia where each State will develop its own method of assessing and reporting the key competencies.

It remains to be seen whether the reporting and assessment of generic competencies will be successful in identifying the strengths and weaknesses in the skill development of the population. Once weaknesses have been identified, it will be another challenge again to iron these out to achieve the result which first prompted the development of generic competencies—better economic performance.

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